COAST TO COAST

Multiple efforts are helping slow the soil salinity tide in regions along the Gujarat seaboard.

CRISIS CALL
Partnerships and new approaches lift the India Climate Collaborative

LEARNING ANEW
Getting schooling back on track in rural regions after the pandemic shock

LIMELIGHT LADY
A ‘portraiture’ and more to explain Meherbai Tata and illuminate her milieu
Salinity ingress has a benign ring to it but don’t be fooled by that. What it means is the seeping in of seawater into soil and groundwater. Such contamination can wreak havoc in coastal regions, as it is doing along a vast stretch of the Gujarat shoreline. More than 2,500 villages, the majority of them on the Saurashtra coast, have been affected as salinity ingress takes a toll on lives and livelihoods.

Our cover story details the efforts of the Coastal Salinity Prevention Cell (CSPC), jointly formed by the Tata Trusts, the Aga Khan Rural Support Programme and Ambuja Cement Foundation, in helping mitigate the damage being caused. CSPC’s multifaceted range of initiatives — in farming, education, dairy development, water conservation and sanitation — have enabled some 126,000 households to find means and methods to counter the salinity tide.

The India Climate Collaborative and its work in bringing together a spectrum of stakeholders to address the ever-rising dangers of climate change is the focus of our special report. In the features section, we look at how technology is being used to improve the country’s public health system; we track a first-of-its-kind fellowship programme in Assam that is building a cadre of high-quality nurses for cancer care and treatment; and we report on a rural community in Nagaland that is getting its ecotourism venture back in business.

A highlight of this Horizons edition is an uncommon profile of the exceptional Meherbai Tata — whose wealth was employed to set up the trust that bears her name — explained through an image that offers a host of clues about the person and the personality. An accompanying photo essay captures different facets of a remarkable woman who excelled in a variety of pursuits.

The photographic is also the way we have chosen to frame a programme that is assisting traditional weavers in four states to connect with customers through the internet, especially social media, and another that provided a platform for 450 students to showcase their artistic talents at the Kochi-Muziris Biennale.

To round off, we have an excerpt from an out-of-the-ordinary book by dog lover Shantanu Naidu, who counts Tata Trusts Chairman Ratan Tata among his friends, and a perspective piece by Dr Rajan Sankar on how India can better tackle the malnutrition scourge that is ravaging so many of our people, particularly children.

Happy reading, and please keep sending in your views about the magazine and its spread of stories.

Christabelle Vazirani

We hope you will help us make Horizons better with your valuable feedback. Please do write to us at horizons@tatatrusts.org.
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**Maharashtra, Tripura best in justice delivery: IJR**

Maharashtra and Tripura have fared best in a ranking list for justice delivery in India. Maharashtra topped the large and midsized states category in the recently released India Justice Report (IJR), while Tripura came out ahead among small states.

Tamil Nadu and Telangana follow Maharashtra in the rankings, arrived at in what is the second edition of the report. Sikkim and Goa are right behind Tripura among the smaller states.

The findings of IJR — a collaboration involving the Tata Trusts, the Centre for Social Justice, Common Cause, the Commonwealth Human Rights Initiative, DAKSH, Prayas, the Vidhi Centre for Legal Policy, and How India Lives — are based on rigorous research that tracks the state of justice delivery across the country.

The report examines the four pillars of justice delivery: the police, the judiciary, prisons and the legal aid setup. It shows up India’s judicial system when it states that two-thirds of those in prison are undertrials, those accused but yet to be convicted in a court of law. The report also states that barely 15 million people have received mandated free legal aid since 1995 and that 29% of judges in India are women.

“The IJRs of 2019 and now 2020 make a significant contribution to laying the evidence base for policymakers and civil society to initiate early improvements [in India’s judicial system] for the benefit of us all,” said Narasimhan Srinath, chief executive of the Tata Trusts.

**Kiosks up in two centres**

The Tata Trusts have set up **swasth** (or health) kiosks in Tirupati in Andhra Pradesh and Ranchi in Jharkhand to help increase screenings for noncommunicable diseases (NCDs).

Located at the Area Hospital in Chandragiri in Tirupati and at the Rajendra Institute of Medical Sciences in Ranchi, these kiosks are the latest in a line of such centres that offer free-of-cost screening services for NCDs such as diabetes, heart conditions, cancer, etc. Several kiosks are already functional in Assam and Maharashtra.

**Mix of writers and styles in Parag Honour List 2021**

A mix of writers and styles feature in the Parag Honour List 2021, the second edition of an annual showcasing of books written in English and Hindi for children and young adults.

Works by Nandita Da Cunha, Adithi Rao, Vinod Kumar Shukla, Jerry Pinto and Sonika Deshpande are among the 35 titles chosen, 20 in English and 15 in Hindi. Instituted by Parag, an initiative of the Tata Trusts, the list covers fiction, nonfiction, poetry and picture books.

The nominations for the list were made by a jury comprising Arundhati Deosthale, Gurbachan Singh and Suneeeta Mishra (Hindi), and Arvind Gupta, Prachi Kalra and Samina Mishra (English). They chose their picks from original work published between October 2019 and September 2020.

“We hope that the Parag Honour List enables access to and awareness about outstanding Indian books for children and young adults,” said Swaha Sahoo, who heads Parag.
Social Alpha launches clean energy challenge

Social Alpha, the nonprofit start-up incubator supported by the Tata Trusts, has kicked off the third edition of its energy challenge. Technoic – Innovations in Clean Energy invites innovators and entrepreneurs to present technologies that have the potential to create significant social, economic and climate impact.

The focus of the challenge this year is clean energy solutions: energy for livelihoods; smart energy systems; energy storage; and thermal comfort. Aligned with the United Nations’ Sustainable Development Goals, the challenge is a search for clean technology solutions that deliver affordability and accessibility for businesses as well as households.

The winning solutions will be nurtured through various stages by Social Alpha to make them ready for the market.

TMC closes in on ten years

The Tata Medical Center (TMC) in Kolkata is gearing up to commemorate 10 years of its founding. Set up in May 2011 by the Tata Trusts, with contributions coming in from Tata companies as well, the Center has evolved into one of the finest facilities for cancer care and treatment in India.

TMC was developed over two phases. The first phase cost ₹5.4 billion and the second, completed in January 2019, cost ₹2.6 billion, raising the hospital’s capacity to 437 beds. The majority of these patients receive subsidised care and treatment.

The numbers notched up by TMC in the decade of its existence are impressive: 150,000-plus patient registrations (20,000-plus new patients a year in the past three years); 80,000-plus inpatient admissions; 35,000-plus surgeries and more than 500 bone marrow transplants.

Today TMC is a state-of-the-art cancer hospital that offers the finest diagnostics, staging and treatment response, robotic surgery, haematopoietic stem cell transplantation and complex chemotherapy. Research guides TMC’s treatment protocols and it is training the next generation of health care professionals through its educational programmes.

Kerala gets trauma centre

The Apex Trauma and Emergency Learning Centre (ATELC), envisioned as a centre of excellence in trauma and emergency care, was inaugurated recently by Kerala Chief Minister Pinarayi Vijayan at the Thiruvananthapuram Government Medical College.

The trauma centre has been set up by the state government and supported by the Tata Trusts, in partnership with the Hyderabad-based Care Institute of Health Sciences.

What works in digital

The connected learning initiative (CLIx), an effort seeded by the Tata Trusts and led by the Tata Institute of Social Sciences in India, and the Massachusetts Institute of Technology, has found that learning outcomes rose when students were taught using CLIx resources, and, young women and students performed significantly better in science with these inputs.

These were some of the findings from the first phase of the programme, implemented in Chhattisgarh, Mizoram, Rajasthan and Telangana.
Fluid is the flow

From agriculture to education, dairy development to water conservation, the Coastal Salinity Prevention Cell’s efforts in Gujarat have made a lasting difference. By Philip Chacko

Gujarat is the state with the longest coastline in India — nearly 1,600km — and the biggest headache on account of it. The first fact has contributed considerably, through trade and commerce, in raising Gujaratis and their entrepreneurial spirit to the skies. The second, the painful part, is driving regions along the state’s shoreline into deep and dangerous waters.

The cause of the distress is salt, more precisely salinity ingress, a rather tame term for a menacing
phenomenon that is harming lives and livelihoods in 2,500-odd coastal villages. Invasive seawater and its salty contents are increasingly polluting the groundwater in these largely rural villages, compromising the health of residents and sabotaging their current and future prospects.

The geology of the region is a factor but the greater culpability lies elsewhere. Fuelled by reckless and rampant exploitation of water resources for agriculture and, to a lesser extent, industrial development, saline contamination of coastal Gujarat’s groundwater has crept up to 15km inland and is creeping further in. There is no workable way to stop this subterranean beast, but it can be controlled to an extent.

**Collaborative push**

That’s the goal being chased after by the Coastal Salinity Prevention Cell (CSPC), a collaborative effort with a multi-thematic spread of people-centric programmes designed to help affected villages and communities, the majority of them clustered in the Saurashtra belt.

Established jointly by the Tata Trusts, the Aga Khan Rural Support Programme and Ambuja Cement Foundation in 2008, CSPC concentrates its attention on enabling people in the eye of the storm to find the means and methods through which they can live with and manage salinity ingress. Farming, water and livelihoods have been the focus, and remain so, for CSPC, and it also has education, dairy development, water conservation, and sanitation and hygiene in an array of initiatives.

Partnerships are the essence of CSPC’s endeavours. It has connected with government agencies, tapped research institutions and tied up with NGOs and other civil society organisations to fulfil a broad-based mandate. That’s a necessity given the severity of the salinity ingress issue and how challenging finding solutions is.

“What we are dealing with is not economic poverty but water poverty,” says CSPC chairman Apoorva Oza, referring to the depletion of water resources that goes hand-in-hand with the contamination curse. “The impact of groundwater salinity is felt in agriculture and dairy production, in migration trends and, worst of all, on the health front.”

The health emergency triggered by the regular consumption of salty water is particularly alarming.
Kidney diseases in coastal Gujarat are about four times the mean — among those hit are children as young as five — and hypertension and arthritis are commonplace.

It’s not as if nothing has been done down the years to tackle the salinity crisis. A host of measures have been tried out since the problem began in the early 1970s. Government committees were formed and policies formulated, investments were made in infrastructure that could counter the seawater tide and, importantly, there has been a massive groundwater recharge campaign.

There are limits, though, to what is possible and doable. “You can never push the sea back, so you have to learn to manage salinity,” says Arun Pandhi, director, programme implementation, at the Tata Trusts, and a member of the CSPC board. “Which is why we look at changing cropping patterns, working with farmers to grow crops that are saline resistant and promoting irrigation solutions.”

**Three ideas**

CSPC’s emphasis on getting its equation right has been crucial in maximising the effect of its exertions. “We began with three ideas,” explains Divyang Waghela, a director with CSPC. “One, to create projects that were contextual to the saline ingress issue and bring rural communities together. Two, to network with the government, NGOs, research institutions and all other stakeholders. And three, to make our initiatives scalable and sustainable.”

The tangible is apparent in what CSPC has pulled off. “We have helped bring the salinity ingress issue to the forefront,” says Mr Oza. “We have touched the lives of tens of thousands of villagers. Our support for agriculture and education has made a difference and then there is the policy and perception impact.”

Much more will be required in times ahead to help the communities of coastal Gujarat. Bottled water — with a global market that topped $250 billion in 2020 — is not really an option for these rural folks.
There is a universal rule that applies when a large group of people get together for any particular effort,” says Gohil Girvarsinh with conviction. “There will be a revolution.”

It’s not an upheaval or a call to rebellion that the 42-year-old farmer has his mind on. Mr Girvarsinh’s revolution is bound to the land and the soil of his homestead in Dihor village in Gujarat’s Bhavnagar district, and just as closely to the two elements of nature that define their well-being — earth and water.

A profound and far-reaching transformation in ways of thinking and behaving is what Mr Girvarsinh is hoping for. “Only if every farmer here engages in new methods of agriculture will there be real change,” he says. That’s the task the Coastal Salinity Prevention Cell (CSPC) — established in 2008 by the Tata Trusts, Ambuja Cement Foundation and the Aga Khan Rural Support Programme — has set itself in regions bordering the Gujarat shoreline, primarily across the Saurashtra coast and also in Kutch.

**Slithery adversary**

Mr Girvarsinh is one of about 65,000 farmers and their families that CSPC strives to enable in coping with a multitude of challenges. Many of these are common across regions dependent on rainfed agriculture, not least the pernicious consequences of climate change. In coastal Gujarat and its 2,500-plus villages, the problem is exacerbated by a slithery adversary that is gaining ground by the day: salinity ingress, or the seeping in of salt from the sea into groundwater and soil.

Farming is the most important component in CSPC’s comprehensive spread of programmes to improve lives and livelihoods. Productivity, water use, soil health, disease and pest management, agriculture value chains and climate-resilient cropping — the organisation covers a wide spectrum of themes and concerns that the state’s seaside-bound farmers struggle with.

Farming afresh

Rampant exploitation of scarce resources is making way in coastal Gujarat for a more sustainable approach to agriculture
Sweet solutions for a salty problem

The agriculture segment in the Coastal Salinity Prevention Cell’s efforts to address the salinity ingress crisis affecting Gujarat’s seaside regions has a range of elements in its fold

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65,000+ farmers involved in the programme

10-20% productivity increase from farming
The complications these farmers face can be pinned in part to geography and historically adverse climatic conditions. Coastal Gujarat is a dry and arid zone, lacking for large and perennial water bodies and with little by way of monsoon rains. Groundwater is the principal source for irrigation and its reckless exploitation over the decades has hurt productivity and undermined livelihoods. Salinity ingress, present up to 15km inland, can be blamed on such exploitation.

It is exceptional, given the circumstances, that this remains the groundnut belt of India (about 60% of the country’s produce is from the region). Among the reasons for the abundance are the intensity of the agriculture practised and the fact that groundnut does not require much water. The salinity alarm would not have sounded so grave if farmers had stuck to groundnut.

But the cultivation of cotton, which requires much more water, has taken hold here and that has aggravated the distress.

**Full-blown trouble**

Monocropping — growing the same crop on the same plot of land year after year, a method that sucks nutrients out of the soil — minimal technical inputs and the rampant use of pesticides have worsened the situation. Add it up and what you get is a full-blown crisis.

Stopping the salinity tide from making further inroads is impossible but it can be slowed — by the sensible and frugal use of water resources, building salinity resilience in crops, promoting superior irrigation techniques, and by introducing high-yielding seed varieties.

CSPC has endeavoured to do all of this and more while working to bring the farming community together. One impediment is that farmers in Saurashtra tend to be individualistic, which makes harnessing the power of the collective less than easy in the region.

Manjibhai Nakum, a 54-year-old farmer from Kotadi village in Amreli district, recalls the time from before CSPC’s involvement and what has happened since. “I used to sit with neighbours and relatives and discuss our troubles but it was just talk; it never translated into anything,” he says. “CSPC offered us a platform where we could come together and learn from one another.”

Agriculture is the only vocation Mr Nakum is familiar with and it has shaped his life, but he was limited by his milieu. “We don’t learn from our experiences until we reflect on it. This programme has always been about experience sharing and it has awakened the community. We have a gained a lot
Chaturbhai Dobariya, a 59-year-old farmer from Charodiya, also in Amreli, jumped at the opportunity of joining the CSPC initiative and has seen his yield per acre — he grows groundnuts, cotton and onions — rise substantially since. “Anything that’s unconventional or new and related to agriculture excites me,” he says. “I did not really know about good agricultural practices and the science behind them. Now I do and that has been a big help.”

**Searching for more**

Productivity is a key factor in the project and CSPC has gone the distance on this through a range of initiatives: with cotton, detopping (nipping the main stem to increase yield) and transplantation of seedlings developed in local nurseries; intercropping with pulses to diversify income sources and reduce risk; fostering newer varieties of groundnuts for cultivation; and supporting horticulture activities and kitchen gardens.

Water-use efficiency has got a lift with drip, sprinkler and laser irrigation systems; there are moisture meters to optimise the watering of fields; and alternate furrow irrigation to save water. Soil health has been enhanced through testing and by using biopesticides, farmyard manure and mulching. The natural has also been preferred to the chemical in disease and pest management.

Sustaining the agricultural value in terms of services and knowledge but, as the saying goes, there is always scope for betterment.”
Chain is as vital a measure as any to secure remunerative incomes for farmers. This unfolds in the CSPC design through collectives that bank on the strength in numbers of farmers. Bulk procurement of inputs lowers costs and collective selling ensures that farmers get a fair price for their produce.

The degree of difficulty in getting these different pieces in order has been high for CSPC. “Salinity is a complex issue and approaches to mitigate it have to be systematic and demand driven,” says programme officer Meghal Soni, who has been associated with the initiative for the past five years. “There are two broad solutions: manage salinity and live with it. Multiple interventions are required and, alongside, you have to educate farmers about how and why things are going bad.”

The traditional farmer mindset — more water, more crop — is the toughest roadblock CSPC confronts in realising its objectives. “This is basically about overexploiting resources,” explains Arun Pandhi, director, programme implementation, at the Tata Trusts. “The farmers of Saurashtra will use every last drop of water to put additional acreage under agriculture. That was fine once upon a time because these were good growing areas. Not anymore.”

Mr Pandhi is certain that tackling the cause rather than the symptoms is the need of the moment. “You have to find enduring solutions to make agriculture sustainable again. What makes it challenging is that the farmer is not particularly concerned about the environment, to be honest. He’ll worry about it next year, not this year, not now. That’s how he’s wired.”

Apoorva Oza, CSPC’s chairman, believes the organisation, having put in the hard yards, is better placed than ever to achieve its goals. “The farming community in coastal Gujarat is fully aware that salinity is something that can’t be blamed on nature,” he says. “They are part of the problem and, therefore, part of the solution. That much has been internalised.”
Lessons for all

The education programme in the coastal Gujarat initiative aims to lessen the toll taken by the salinity ingress crisis on learning outcomes

Our children had difficulties with reading and writing and with maths as well. There were no separate classrooms for students. Interactions with parents were irregular and the school’s management committee members rarely showed up for meetings.”

Varsaksiya Dhanabhai, a resident of Mojap village in Gujarat’s Devbhumi Dwarka district, had a bunch of complaints about the state of affairs at the government school her child attends. That was before an education programme designed and implemented by the Coastal Salinity Prevention Cell (CSPC) began making a difference.

The first phase of the programme unfolded in 2015 in the Okhamandal subdistrict, which was chosen for the initiative because its literacy levels were worse than the state average. The reasons were the usual: a generally low literacy rate, even lower female literacy, unsuitable learning processes for first-generation students, and a poor connect between schools and communities.

Ms Dhanabhai would have, like most parents in Gujarat and elsewhere in India, sent her kid to a private school if she could afford it. That by itself is no guarantee of a quality education — a 2019 survey of the state’s schools by the NGO, Pratham stated that 23% of class VIII students could not correctly read a paragraph in Gujarati, 65% could not do simple division and 62% could not read an English sentence — but it surely would have been better than what Ms Dhanabhai and her child were saddled with.
Given the context and the circumstances, providing a learning leg up for disadvantaged parents like Ms Dhanabhai made good sense. There were two parts in CSPC’s initial thrust: early childhood care and education, and primary education. Government-run anganwadis (rural childcare centres) were the setting for the first segment, which has reached some 1,400 children in the three-to-six years age bracket.

**Model centres**

CSPC partnered the Aga Khan Foundation to build the capacity of anganwadi workers and set up a network of village-level volunteers. The programme aims to cover a total of 50 anganwadis and 10 ‘model centres’ were developed. Each was equipped with learning aids, and the workers here were trained to plan and conduct learning sessions for the children.

In the primary school component, remedial classes were organised for children with learning shortfalls; libraries were set up and a resource centre was developed at the state government’s District Institute of Education and Training in Jamnagar. More than 3,200 children in the 7-14 age group have benefitted as a result.

The first phase of the programme, which was completed in 2018, has achieved tangible outcomes. Children in the selected anganwadis have recorded all-round improvements on school-readiness indicators. In the primary education slice, over 70% of students in the intervention schools now have foundational learning skills and about 50% of them are better in maths and science.

Bringing education into the salinity ingress framework had everything to do with who it was targeted at. “We considered every aspect related to the issue and it was clear that children are critical stakeholders in the larger initiative,” says Divyang Waghela, a director with CSPC.

The education programme got off the ground following a 2014 survey that assessed learning standards in Junagadh, Amreli and Devbhumi Dwarka, three districts where CSPC had deep roots through its livelihood and water initiatives. Rural clusters were the focus of the survey and it involved interactions with school and government authorities and members of the community.

CSPC is building on the success it has achieved with a second phase of the programme. This commenced in 2019 and the bar for it is set higher: enhancing the...
learning capabilities of students in 97 government primary schools in Okhamandal. Capacity building of teachers and headmasters and engaging the community top the agenda here; the goal being to provide students with an enabling educational environment that prepares them well and proper for high school.

Enrolment processes, age-appropriate children’s literature, learning aids, teacher training, school management committees and their functioning — the second phase has incorporated a host of elements to ensure that the programme realises its objectives, primarily to create a sustainable impact where it matters most: in the classroom.

The programme has modules that facilitate academic support for teachers, strengthens the leadership abilities of headmasters and, importantly, fosters continuous community engagement through multiple channels. Additionally, local volunteers have been taken on board and provided with training and learning material so that they can, when and where necessary, take classes for batches of students in their villages.

The logic behind the education effort is straightforward, even though it may not seem to be linked directly to the salinity ingress emergency. “Coastal salinity leads to a loss of livelihoods and that fuels outward migration,” explains CSPC chairman Apoorva Oza. “Scarcity of drinking water means schools suffer and education suffers. Children run back home during every recess since drinking water is so scarce, and adolescent girls have to spend time collecting water.

“That’s one fallout of the salinity crisis and that’s what we are trying to mitigate.”
Every facet of every effort that the Coastal Salinity Prevention Cell (CSPC) undertakes through its multifaceted programme spread in the regions along the Gujarat seaboard is related to water. This is the elixir at the heart of it all and it demands protection, conservation and augmentation. Managing quality and quantity is, in the context, critical if any sort of success is to be wrested from what is a near-calamitous situation.

Groundwater and the aquifers that sustain them are severely stressed across India. A 2018 study published in the International Journal of Environmental Science and Technology stated that aquifers in 16 Indian states are contaminated. The groundwater reality is grimmer still in Gujarat, and much more so in the coastal

Liquid relief

Conservation, protection and augmentation are at the core of managing water resources, and women are at the forefront of the effort

Children at a hand-wash station in their school in Okhamandal in Jamnagar
belt of Saurashtra where CSPC’s endeavours are concentrated.

Water resource management underlines CSPC’s work, particularly in agriculture. The intent is to use water efficiently in farming, reduce the need for it and enhance its availability. Villages and the wider community are the most important factors in making that happen. The infrastructure and equipment required to help them — water-harvesting structures, check dams, farm ponds, well recharge mechanisms, moisture meters and irrigation systems — bolster the cause.

“There are two approaches that CSPC has adopted,” says Divyang Waghela, who heads the water programme at the Tata Trusts and is a director with CSPC. “We try to improve water-storage and water-recharge capabilities at the individual and community levels. At the individual level, we promote small-scale solutions that are affordable and durable. For the community, we look at larger water-storage structures where investment support is provided, either by us or through government funding.”

On the supply side, CSPC has enabled the building of water-harvesting structures such as check dams, farm ponds and percolation tanks. On the demand side are drip, sprinkler and laser irrigation systems, the promotion of drought-resilient crops and the installation of water and moisture meters. A highlight in the overall effort is ‘fracturing-led recharge’, a technique to find the sweet spot of aquifers and rejuvenate them.

**Harvesting the elixir**

Rainwater harvesting is another method that CSPC has pushed hard on with individual households. “We have supported close to 5,000 families in building rainwater harvesting structures,” says Mr Waghela. “This takes care of their drinking and cooking needs. It’s freshwater and it’s available at their doorstep. Crucially, it saves women the labour of trudging long distances to fetch water.”

Women are the ones most affected by Saurashtra’s water woes, and most welcoming of projects that lighten their load. A number of women collectives have emerged as a result, forging their own identity and challenging entrenched power setups. “They have a voice now and they say what needs to be said,” says CSPC chairman Apoorva Oza. “They realise that unless they assert their power a patriarchal society and patriarchal governments will not listen to them.”
There are two common reasons why rural Indian families rear cattle: it provides an additional source of income and it cuts the risk attached to being dependent solely on agriculture for a livelihood. It’s no different in Gujarat, where the practice is perhaps even more pronounced. According to census data, close to half of rural households in the state rear cattle. The numbers are higher still in the stretch along the Saurashtra coastal belt, where about 70% of rural families have at least one head of cattle. Animal husbandry is, consequently, an important part of the social development efforts of the Coastal Salinity Prevention Cell (CSPC).

CSPC works with small and marginal farmers to improve the productivity of milch cattle, promoting proper breeding and feeding methods and providing market linkages. The health and

Along the milky way

The show is getting stronger for dairy farming, which provides a steady alternative source of income while reducing the dependency on agriculture.
fertility of the bovines being bred are other aspects on the animal husbandry agenda.

Camps are held in villages covered under the programme to treat the increasing infertility problem affecting cattle in the region. This is caused by them feeding on cotton seed cake — easily available in the area thanks to the large volume of cotton production — which harms their reproductive organs. The programme has helped cattle-rearing villagers cultivate Azolla in small ponds, providing them with the initial culture, necessary equipment, and technical and other guidance.

**Fermented fodder**
The production of silage — fodder harvested while green and kept moist by partial fermentation in a silo — is another facet that the programme has adopted to keep cattle well fed.

CSPC has, additionally, worked on capacity building with farmers to encourage better cattle management practices; tied up with the Rajkot-based Maahi Milk Producer Company to improve their reach and returns; and partnered the BAIF Development Research Foundation to improve cattle breeds through artificial insemination and to organise veterinary camps.

“There is no doubt that animal husbandry is a solid alternative for farmers in the programme to improve their incomes,” says Divyang Waghela, a director with CSPC and a veteran of the salinity ingress initiative. “Gaps still remain but what’s promising is that the market is opening up and private dairies like Maahi are coming into the picture and putting things in place. This will benefit our farmers further.”

The dairy business is a dependable alternative for coastal Gujarat’s farmers.
Ebb and flow

Water, sanitation and hygiene comprise a crucial subset of the salinity ingress programme, especially with regard to women.

Ensuring that communities have access to quality drinking water, making menstrual hygiene management a priority while ridding the subject of taboos and myths, and providing water and sanitation solutions in villages and schools— the water, sanitation and hygiene component in the salinity ingress programme has its hands full.

Drinking water is a trickle in coastal Gujarat and the shortage has got worse as groundwater becomes increasingly unsuitable for consumption due to the high TDS (total dissolved solids) in it. Salinity ingress is the villain here. The lack of freshwater bodies in the extended region exacerbates the problem.

The Coastal Salinity Prevention Cell (CSPC) has endeavoured to provide solutions by connecting villages with government drinking water supply systems. That’s no guarantee for a regular flow of the precious liquid, given the geographical disadvantage that places Saurashtra’s seaside regions at the end of the supply line.

Dual-source water supply systems are the solution here. Communities have been sensitised to strengthen local drinking water sources and, on the other hand, they have been helped in connecting with government water supply schemes.

‘Water budgeting’, which
means the economical use of whatever water is available, has been the method CSPC has tried out to ensure that the scarcities of summer are better managed. Water budgeting has become a regular exercise to map demand and supply and explain the mismatch to the community.

Water saving techniques have been introduced to minimise wastage and increase water-use efficiency. Used household water is reused for irrigation, there are water meters at farms and the growing of crops that require less water is promoted. Water testing and reporting have become the norm in many villages, as has chlorination (to deal with impurities) and portable water filters.

CSPC’s concern for children is reflected in its project to create and sustain hygiene and sanitation facilities in 150 government primary schools in Amreli, Bhavnagar, Kutch and Devbhumi Dwarka. More than 30,000 students have been covered under the project, water filters have been installed in the schools and, drinking water and handwash stations have been built or refurbished.

CSPC has found success in running initiatives on drinking water and on sanitation parallelly, not easy in a state where each has a separate government department. “We interacted with both and integrated the initiatives at the village level,” says Divyang Waghela, a director with CSPC.

**Partnership project**

A large public-private partnership venture, the Coastal Area Development Project, has been co-created by CSPC with the Water and Sanitation Management Organisation, a semi-government body, to provide safe and assured drinking water to 428 coastal villages in 10 districts.

Perhaps a more striking success is CSPC’s work in menstrual hygiene. More than 37,000 women and adolescent girls from 240 villages were the target of a concerted campaign to untangle the web of taboos and plain old patriarchal prejudice that surrounds menstruation.

This participative and individual-centric project was conducted with small groups of women and adolescent girls, and village self-help groups were enlisted for support. Included in the mix were regular health checkups, access to menstrual hygiene products, tie-ups with sanitary pad manufacturers, and counselling sessions to sensitise males of the species.

Apoorva Oza, the chairman of CSPC, sounds beyond happy recounting an anecdote that illustrates what the overall effort is achieving in tradition-bound rural settings: “Coastal societies are very conservative and here you have a 15-year-old girl talking to an audience, with her father in it, explaining menstrual hygiene and telling people to get rid of all these stigmas. Seeing her having the guts to do that is in itself a matter of pride.”
For climate’s sake

Catalyst as well as participant, the India Climate Collaborative is pushing the partnership envelope to address the most alarming crisis of our times

Along with Covid, 2020 saw anxiety peaking around a global challenge carrying even more venom — climate change. With extreme events such as floods, storms, droughts and wildfires rising rapidly, the discourse on climate calamities has become even more mainstream, in India as much as elsewhere.

With a vast coastal belt and 700 million-plus people engaged in agriculture-based livelihoods dependent on the monsoons, India’s demographic is at high risk from climate disruptions. To focus on the climate impact buffeting the country, the Tata Trusts launched the India Climate Collaborative (ICC) in 2019.

ICC brings something new to the sustainability space. India’s first-ever collective platform for climate action has the mandate of bringing together a gamut of stakeholders — from government and businesses to research institutions and implementers — to help build the capacity of the country’s climate ecosystem.

One of the gaps the Collaborative addresses is the India perspective on climate change. “Much of the international narrative on climate is driven by the Global North, the developed world; ICC offers a platform for us to take charge of our own story,” says Shloka Nath, who heads the sustainability, and policy and advocacy verticals at the Trusts.
Climate change has been on the Trusts’ radar for a number of years. In the sustainability portfolio are several projects with climate-mitigation objectives. Programmes for clean air solutions, promotion of solar energy usage and groundwater recharge have been implemented in pockets across India. An example is the Foundation for Ecological Security, a Trusts-supported initiative that works to preserve shared natural resources that are collectively called commons (land or resources belonging to the entire community).

**Funding for solutions**

More needed to be done, though. As the climate change picture began to get sharper and grimmer, it became obvious that the challenge could not be tackled alone. “We needed the collective efforts and leverage of India’s greatest philanthropists and businesspeople, to work together and strategically fund climate solutions,” says Ms Nath.

This was the trigger for ICC’s formation. The response has been strong, with supporters including Wipro CSR, EdelGive Foundation, Rohini Nilekani Philanthropies, JSW Foundation, the MacArthur Foundation, the Hewlett Foundation, the Oak Foundation and Bloomberg Philanthropies. The knowledge partners are equally impressive, ranging from the homegrown Ashoka Trust and The Energy and Resources Institute to international consulting firm Dalberg, the International Union for Conservation of Nature and the World Wildlife Fund. The

**Mapping the threat**

Whether it’s Chennai facing the prospect of running out of water this summer, Gujarat dealing with increasing coastal salinity or Uttarakhand battling landslides and flash floods, India’s climate woes are on the increase. “Our country’s future growth is now intricately linked to climate risks,” says Shloka Nath, head of sustainability, and policy and advocacy at the Tata Trusts.

How can India invest in resilient infrastructure and governance systems to create climate change buffers? That’s the question the India Climate Collaborative (ICC) hopes to address through its work. An important initiative in its spectrum of efforts is the partnership with the Delhi-based Council on Energy, Environment and Water to build a ‘climate risk atlas’ that will identify hazards arising from climate threats across geographies and sectors.

The immediate output of this engagement will be a ‘districts vulnerability compendium’ that pinpoints regions most in need of support with climate action, and to design interventions based on informed climate risks.

Work on the atlas is being supported by various organisations, including the European Union, and is being developed in close collaboration with a panoply of experts, among them the United Nations Office for Disaster Risk Reduction, the Coalition for Disaster Resilient Infrastructure, the National Disaster Management Authority, the World Business Council for Sustainable Development and the Indian Space Research Organisation.

ICC is also involved in furthering knowledge sharing. The first step here is to map the key players in the nation’s climate ecosystem and for this a survey is being carried out in partnership with the Ashoka Trust, a network of social entrepreneurs, and Green Artha, a climate innovation and investment firm.

The project will have two branches: ecosystem mapping and social innovation mapping. Ecosystem mapping takes stock of key influencers in the climate field, including potential funders, innovators and organisations. Social innovation mapping will analyse how new solutions are impacting the field.
Collaborative has also linked up with think-tanks and a cross-section of civil society organisations.

One of ICC’s goals is to attract philanthropic funding for climate action efforts. “Philanthropic capital is a resource here because of its ability to make patient bets and scale up strategies,” explains Ms Nath. “However, climate-related philanthropy in India is limited.”

Philanthropy in India has traditionally been targeted at areas such as education, health and livelihoods. That may be changing, if not fast enough, as climate-change crises threaten the lives of huge numbers of people, especially those from marginalised regions. ICC’s endeavour, in the context, is to highlight key spheres that need funding support and to optimise philanthropic impact. “We work closely with businesses and philanthropies to increase domestic funding for climate solutions,” adds Ms Nath.

Aside from the foundational strengthening of the country’s climate change ecosystem (see Mapping the threat on page 26), ICC has pointed programmes on air quality, clean energy, water security and sustainable land use.

Air attack
Air pollution is a matter of particular concern given the growing evidence of its deadly effect. Reducing air pollution and carbon emissions go hand in hand, and ICC works to identify important organisations in the climate-change space. ICC recently launched the India Clean Air Connect (ICAC) campaign in collaboration with the Bengaluru-based Sensing Local and EdelGive Foundation. The campaign is aimed at mapping efforts to tackle air pollution across the country so as to understand how initiatives can be aligned and supported.

Another initiative is a field project in Delhi where ICC has partnered Sesame Workshop India to use the Sesame Street puppet characters in multimedia content aimed at children to get their perspective on air pollution.

The challenges are more complicated when it comes to water security. The country’s water woes are caused by a combination of uninformed urban planning, ad hoc industrial development and poor farm practices. ICC is trying to bring about a mindset change by developing a digital platform that
INDIA’S CHALLENGE

India is deeply vulnerable to climate change

Country-level vulnerability to climate change:
‘Coverage from risks’ versus ‘potential to respond’

Because of 3 critical risk factors

1. High agricultural dependence
   - 700 million-plus people depend on agriculture, which is severely exposed to climate shocks

2. Long coastline
   - Our coastline, which houses some of the most populous economic hubs, is at risk from rising sea levels

3. High fossil-fuel dependence
   - Although 65% of net capacity addition in 2017 was renewable energy, India’s high fossil fuel base will keep it locked in a high emissions cycle in the near-term

On average, climate change will have a 5-9% impact on agriculture each year, translating to a 1-1.5% annual loss in GDP

India’s energy sector accounts for 71% of the country’s total GHG emissions, making energy the most important lever for mitigating climate change
We are already facing the initial effects of climate change

Temperature is on the rise

Rainfall is decreasing

And extreme weather events are becoming more common

 Unless we act now, India risks deeper, more systemic effects in the future

- 35% increase in malnutrition, resulting from a fall in the nutritive value of crops and higher food prices
- 15% fall in income, and indebtedness will increase due to crop failure resulting from variations in rainfall and temperature
- Lower access to safe drinking water due to a fall in water tables and contamination resulting from long dry-spells and saline ingress
- Increased school dropout rate of children, especially girls, due to lower disposable incomes as a consequence of crop failure

Infographic courtesy: The India Climate Collaborative
will enable communities to implement water solutions without negatively impacting upstream or downstream flows.

The platform will share solutions, GIS maps and tools, training manuals, and a toolkit for problem diagnosis. The objective is to have this serve as a template for local governments and project implementers to achieve sustainable water and socioeconomic outcomes.

Like air and water, soil pollution is a huge environmental burden. Here, ICC focuses on nature-based solutions for climate change, and natural farming is one of the pathways to make land use more sustainable. This chemical-free farming model helps farmers reduce expenses on fertilisers and pesticides, and encourages growing of nutrient-rich local crops and traditional seed varieties. Apart from making farming more sustainable, it also leads to improvement in soil health, biodiversity and water conservation.

**Convergence for impact**
Scale and spread are crucial in all the work that ICC undertakes. To this end, the Collaborative is convening key players for collective action, not least the enormous network of grassroots organisations working with smallholder farmers. In December 2020, the ICC co-hosted a briefing on natural farming along with the Council on Energy, Environment and Water and the National Coalition for Natural Farming.

“These solutions need to be implemented at a landscape level and in partnership with the government,” adds Ms Nath. “Otherwise, interventions run the risk of existing in silos. Additionally, philanthropy can play an important role in accelerating policy-level interventions.”

On the clean energy front, ICC has a ‘scoping project’ that identifies opportunities for philanthropic action across multiple areas such as clean energy access, sustainable cooling, electric mobility, and so on. There’s a farmer angle here as well: a pilot project in Odisha on solar-powered cold storages. Working with the Bengaluru-based SELCO Foundation, ICC aims to test community-based models to support small farmers with clean energy-based cold storage facilities.

Climate change and worse, climate shocks are here to stay. That much is certain. It can be said with as much certainty that it will take all of the world working together for this clear and present danger to be tackled. ICC is playing a crucial role as catalyst in the process.

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By Gayatri Kamath
Learning anew

Zoom calls, libraries on bicycles, open air camps — the Tata Trusts’ education team went all out to extend learning beyond the classroom during the pandemic

Manuel Soy, a class X student at the Government High School in Jate in Jharkhand’s Khunti district, had given up on his board exams. Sugna Kumari, a class VII pupil at the Government High School in Chandela near Abu Road in Rajasthan, was on the verge of dropping out of school.

Manuel and Sugna were two among the vast majority of India’s 250 million schoolchildren for whom 2020 was a lost year. As the Covid pandemic and consequent lockdowns derailed life across the country, some 1.5 million schools shut shop in March and stayed shut for about 10 months. Bringing formal education back into the lives of these children was always going to be a difficult proposition.

Learning curve

Before any methodology could be devised, there was a learning curve to be navigated by everybody involved. For the Tata Trusts, with an education portfolio that has helped improve outcomes for more than 4 million students in different parts of the country, the task was clear-cut and immediate.

“The long break meant children losing touch with schooling,” says Amrita Patwardhan, the head of the education portfolio at the Trusts. “There was the real risk of older kids from low-income homes quitting school permanently to support the family economically. It was critical to keep the continuity of learning going.”

The scale and urgency of the problem demanded quick and feasible alternatives.
In a matter of weeks, the Trusts recalibrated their approach to deal with the changed reality of schooling. Going digital was, for sure, the straightforward solution but this was never really an option for countless children cut off from the online world due to issues of connectivity or a lack of appropriate devices, frequently both.

The Trusts’ education team has taken a mix-and-match tactic to cope with the crisis. Given that there is no ignoring online education and the advantages it offers in Covid times, schoolchildren, teachers, principals and volunteers have been guided in the shift to the digital lane — via hundreds of online training sessions, and creation and curation of online resources for learning.

Quick surveys showed that the reach of smartphones in areas where the Trusts are active was only around 10-40%, which meant the vast majority could not be reached by online mode alone. The team, therefore, made all efforts to take learning into the villages where the children live.

Imparting education in the village
milieu was not a far stretch for the Trusts, thanks to the strong community relationships they have built over the course of executing their multi-themed programmes (which typically cover livelihoods, water and sanitation, and education). The on-ground implementors are associate organisations of the Trusts with experience, expertise and the essential community connect.

**Local flavour**

Himmotthan Pariyojana in Uttarakhand, Collectives for Integrated Livelihood Interventions (CInI) in Jharkhand and the Centre for microfinance (CmF) in Rajasthan were among the implementors who drove the restart education initiative. Each has, in its own manner and in the context of local conditions, contributed to the cause.

In Rajasthan, CmF took the storytelling route to resume learning. Conducted by team members and teacher volunteers, summer camps were set up in open spaces: outside *anganwadis* (childcare centres), in school courtyards, verandahs and temple halls. While the initial thrust was on engaging children through stories, reading, art and games, other learning activities were added gradually.

Schoolteachers were convinced to join in and take classes. To increase reach, the Trusts inducted and trained a large number of village volunteers to work with children.

To assuage health concerns, the team engaged with education department officials, school principals, teachers, panchayat (village council) members and parents to make safety the priority. Covid protocols were followed, over 20,000 facemasks were provided and student groups were restricted to 10-15 children.

By end-2020, there were about 300 such improvised learning centres in CmF’s project areas — Abu Road, Pindwara, Bali and Hindaun — and more than 5,500 children from the pre-primary, primary, middle school and remedial sections had benefitted as a result.

“We were conscious that not all learners and teachers have access to the internet and technology, or the skills to use learning apps,” says Vijay Singh, CmF’s general manager. “Our education interventions are with the most impoverished communities, especially in tribal and remote areas where families need such support the most.”

For the CInI team in Jharkhand, ‘mobile libraries’ became the central facet of lockdown learning. Books were
When the pandemic struck and India went into lockdown, a crucial component of the Tata Trusts’ education portfolio came under the spotlight — edtech, which promotes meaningful use of technology by teachers and students for better learning outcomes.

Edtech has some meaty partners, among them the Connected Learning Initiative (CLix), a technology-enabled learning model seeded by the Trusts and led by the Tata Institute of Social Sciences and Massachusetts Institute of Technology, USA. Also on board is Khan Academy India, a nonprofit educational organisation.

“It was a hyperactive time for our education technology interventions; we had to very quickly design new programmes that would support the use of technology over the last mile,” says Aryadev AR, manager of the edtech work.

Khan Academy India supported the Delhi education department with lessons in maths and science that were sent to 500,000-plus students via WhatsApp groups of school principals and teachers. Teachers in several states, including Delhi, Punjab and Assam, were trained to teach these micro lessons, which reached an estimated 1 million students.

Teacher training was the focus for CLix, which conducted more than 250 training sessions in Chhattisgarh, Telangana and Mizoram. Another Trusts’ edtech initiative is Integrated Approach to Technology, under which students research school curricula topics and create multimedia presentations. This builds higher order digital and thinking skills.

During the lockdown, the team piloted online WebQuests where students studied topics such as disaster management and communicable disease. They designed presentations, took online quizzes and interacted with experts online.

One big learning from the exercise to promote online education was that children often started lessons in the evening, this being the time when phones were available to them. That meant the Trusts’ teams had to be available for support to parents and teachers at the same time. “We realised that learning was not a 9-to-5 affair,” says Mr Aryadev.
distributed in villages through what came to be known as the *jholas* (or bag) library project. Team members and volunteer schoolteachers carted books in *jholas* hitched to bicycles for supply to children at their homes (in December alone, 10,000 books were issued in Khunti, Hazaribagh and East Singhbhum districts).

CIInI also organised small teaching camps in villages. It advertised for volunteer-teachers and trained the 650-odd respondents, many of them fresh graduates and college students. The effort has helped in excess of 12,700 children in Jharkhand. “There was such great demand for these camps that we needed more hands,” says Divya Tirkey, who heads CIInI’s education initiative.

**Teacher volunteers**

In hilly Uttarakhand, the Himmotthan team swung into action as early as April, mobilising volunteers to start open community classrooms in project villages in Tehri-Garhwal, Nainital, Dehradun, Bageshwar and Rudraprayag. Students without access to smartphones were taught through these community classes.

Himmotthan worked with a group of 150 government schoolteachers in Kotabag in Nainital to target children who could go online. Daily lessons and weekly learning plans were shared on WhatsApp groups and Facebook pages. The intent is to keep this online learning going alongside community-level classes.

For the digitally deprived, Himmotthan team members and volunteers physically circulated books to children and held 75 month-long reading *mela* (fairs), accessed by children and adults. In Jharkhand’s Khunti district, CIInI worked with school management committees to find parents willing to set up mini libraries in their homes — there are 24 such mini libraries in the region — and in Bali in Rajasthan, CmF put children in charge of similar home libraries.

Online platforms were used to cement the learning agenda. WhatsApp became the preferred platform to link teachers and principals with students and parents.

Parag, a Tata Trusts initiative, partnered the Rajasthan state education department and CmF to create a weekly Hindi digital magazine called *Hawamahal*. This has links to YouTube videos and stories and activities for teacher and student.

In Jharkhand, CIInI created local language content from *Tidingbaha*, its kids’ publication, by converting stories into animated videos in Mundari, Santhali and Nagpuri, as well as English and Hindi. These videos were uploaded on YouTube and shared via school and parent WhatsApp groups. More than 6,500 parents and some 500 teachers have been roped in to help popularise the videos with kids.

The overall learning restart endeavour of the Tata Trusts has enabled students like Manuel and Sugna to look ahead with hope. Manuel and his schoolmates are back in class, this time online, while Sugna has been brought into a remedial learning programme. They are making up for lost education time in a hurry.

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*By Gayatri Kamath*
GROOMING READING

Giving flight to the joy of reading is what Parag, a Tata Trusts initiative, has set its mind on. And its books, too. With some 680 original stories for children in the 5-16 age group, Parag's books have been published in nine mainstream Indian languages as well as in the tribal languages of Mundari, Bhilori, Pawri and Santhali. These books have been accessed by more than 40 million children — and not a few adults — in schools, community libraries and homes. Nurturing children's literature in the Indian milieu and in Indian languages is Parag's principal goal, and it walks the extra mile to welcome kids from rural and poor backgrounds to the world of reading. Set up in 2005, Parag also supports school and community libraries, has instituted awards for children's literature, runs professional courses and holds events for teachers and librarians.

A young student reads aloud to her classmates at a government school in Yadgir, Karnataka
Students at a government school library in Beda in Rajasthan’s Bali district. Reading a book in your mother tongue – that seems elementary but India has always seen a deficit in regional language literature. The gap is especially wide in children’s reading and this is what Parag aims to bridge — by working with education teams in different places, identifying writers and illustrators, and creating books that children can relate to.

Manya ki Dahad (Manya’s Roar) is a Hindi storybook for children, one of many that Parag brings out in Indian languages. Published by Eklavya, 2019

To take the joy of reading into tribal communities, Parag developed a set of 10 short storybooks in Pawri and Bhilori. Some of these were used in schools in Nandurbar, Maharashtra, where first-generation learners speak tribal dialects. Author Varsha Sahasrabuddhe traveled to Nandurbar to understand the lifestyle of the local community. The result – a set of stories and illustrations (done by Madhuri Purandare) that reflect the cultural and social uniqueness of local children. Published by Moolgami, 2016

When Parag tried to develop books in Mundari, a tribal dialect spoken in Jharkhand, it ran into unexpected difficulties. Words and meanings changed every few kilometres and the process of finalising error-free manuscripts was painstaking. The books are used by children in schools in Jharkhand’s Khunti district.
Nonfiction books are part of Parag’s publishing portfolio. Presented in a visually rich format, *Balti Ke Andar Samandar* (The Sea in a Bucket) uses a character called Sonu, and her bucket, to make children understand water sources. The book was developed by Avehi Abacus with inputs from children and teachers. Another popular Parag book is *The Poop Book!,* which uses animal poop as a way to make children laugh while learning about nature. This has been translated into French by Alliance Francaise. *Balti Ke Andar Samandar,* published by Eklavya, 2013

Children’s literature rarely features people with disabilities, which is why Parag has introduced books where disabilities are portrayed realistically. The idea is that children with disabilities see characters in books that they can relate to, and children without disabilities get an understanding of the life of the differently abled. Parag has also brought out dozens of audio books, books in braille and tactile books. *Kittu Udaan Choo,* published by Eklavya, 2019; *Catch That Cat,* published by Tulika, 2013

Teacher and children in a classroom in Rajasthan’s Bali district get involved in a ‘big book’. With large fonts and illustrations, these books help students in a large group engage with the story being read out, even those who haven’t yet learned to read. Realising that very few publishers were interested in bringing out books of the kind, Parag decided to explore this opportunity and has supported the development of 16 big books in Hindi and English.

It’s not just literature for children; Parag also encourages literature by children. *Chashma Naya Hai* (The Spectacles are New) is a compilation of 13 stories written by children between 9 and 16 years of age, living in five settlements in Delhi. The book, developed by Ankur Society for Alternatives, features the imaginative narratives of children from marginalised backgrounds. *Chashma Naya Hai,* published by Eklavya, 2019

During the pandemic, Parag accelerated its digital publishing engagement. In association with Rajasthan’s State Council of Educational Research and Training, it started a weekly digital magazine called *Hawamahal,* which provides audio and video learning content for students. Library Khidki is a similar engagement (with Uttar Pradesh’s education department).

Parents at a school library in Rajasthan. Community engagement is a core element of the library initiative and parents are invited regularly to visit these libraries.
A tele-consultation at a health clinic in Konduru village in Andhra Pradesh’s Krishna district

Tech-tonic boost to lift a lifeline

Technology is being employed in a variety of ways to help enhance India’s public health system

An overview of India’s healthcare system reveals a skewed distribution of resources, with only around a quarter of it devoted to rural areas that are home to over 70% of the population. Look deeper and a host of other ills plaguing India’s public health system are revealed: shortages of staff and medicine, inadequate — and often crumbling — infrastructure, low quality of treatment and care, and a general sense of despair about the whole edifice.

Studies have shown that 25-30% of people who get pushed below the poverty line every year are those forced to cope with unbearable medical expenses. Rural folks have it worse since they have to travel long distances to access hospitals. A mitigation solution to tackle the twin challenges of scarce facilities and limited resources is technology, and this is being employed to a greater extent across the country.
“Technology is an essential for a large-scale, disruptive transformation in India’s healthcare setup,” says HSD Srinivas, project director, health systems, at the Tata Trusts. “The health infrastructure in rural areas remains unutilised because of resource constraints and rural patients often land up in tertiary hospitals. This increases the pressure on the system and frequently leads to long waits for admission. Technology can help in this regard.”

**Reach and impact**

The Trusts have over the last few years been increasingly using technology to improve the reach and impact of multiple programmes in the health sector. For example, tele-health services have been woven into a range of the Trusts’ healthcare initiatives. And technology is the enabler in projects looking to strengthen the country’s public health systems — connecting diagnostic devices to decision-support systems, riding on advances in information and communications, and even restructuring processes to provide solutions for public health issues.

The Trusts have been running telemedicine programmes in Telangana, Uttar Pradesh and Andhra Pradesh for a number of years. These programmes became more important than ever during the pandemic. In the ‘Telangana care coordination centre’ initiative, a pilot programme has enabled nurses and technical staff based at a central facility to set up virtual consultations with specialists in district hospitals and direct patients to relevant hospitals.

Feedback from beneficiaries and medical staff help close gaps quickly since the information reaches the right authorities, and fast. Electronic health records have been a part of the programme. A customised application was developed for the telemedicine centre, which captures health records against unique IDs. These centralised records can be accessed when patients visit any inter-linked facilities.
The Telangana centre functioned in tandem with a group of doctors from government hospitals and routed virtual consultations. Despite the challenges of the lockdown, the Trusts managed to set up a call centre to monitor Covid-positive patients who were under home quarantine. These patients had access to the telemedicine centre’s doctors.

In Andhra Pradesh, the Trusts’ hub-and-spoke telemedicine network has been making primary healthcare more accessible and cost effective. The project has sited the hub in Vijayawada and set up 20 clinics run by the Trusts in underserved rural zones as the spokes. Public health centres have been equipped with connected medical devices and high-speed internet.

Remote but not restricted

The tech infrastructure enables a handful of doctors located at the hub to treat patients from 365 villages. Set up in 2017, the telemedicine network not only promotes a proactive approach towards health and wellness, but also facilitates the creation of a scalable, affordable and commercially viable healthcare ecosystem.

A similar model has been operating since 2018 at the Ramakrishna Mission Sevashrama in Vrindavan in Uttar Pradesh. Here a network of nine telemedicine units help villagers in the state’s rural areas to access primary healthcare.

Initiatives such as these demonstrate the power of telemedicine to provide a much-needed helping hand to public health systems. As Mr Srinivas explains: “A country with a population of 1.4 billion people can’t be serviced by only two million doctors. You need to utilise our doctors’ expertise intelligently through technology in order to ensure that it reaches out exponentially to a larger base of patients.”

The Trusts have built in other

Mobile medical units (MMUs) tend to be white vans. Which is why the eye-catching pink bus draws attention. This colourful bus offers mobile medical services in Chittoor district and is attached to the Sri Venkateswara Institute of Cancer Care & Advanced Research in Tirupati, Andhra Pradesh.

The pink MMU has been designed to meet the needs of people living in remote areas and it serves many purposes: screening for breast, cervical and oral cancers, tests for noncommunicable diseases such as hypertension and diabetes, and even examinations with mammography machines.

Camps are organised six days a month in collaboration with public health functionaries to ensure maximum attendance (not less than 70 beneficiaries per camp). And there’s a call centre to provide support and conduct follow-up with patients.

The MMU was launched by the Tata Trusts through its associate organisation, the Alamelu Charitable Foundation (ACF), set up in 2017 in partnership with the Tirumala Tirupati Devasthanams to implement a joint cancer care initiative.
technology solutions into their health portfolio. The team has electronically connected health facilities in various states in order to extend clinical services. It closely works with hospital administrators to restructure processes. And it has set up a toll-free number to make it easier for patients to seek appointments and get information about hospital services available nearby.

Apart from state-level initiatives, the Trusts have also been offering support to the central government to bring extra doses of technology into the public health system. One example is the pan-India noncommunciable diseases (NCD) programme, where an app has been developed to screen patients at the public health centre (PHC) level.

In the NCD initiative, the Trusts have partnered the central government’s Ministry of Health and Family Welfare and Dell Technologies to develop software that contains an electronic patient record system, which enables screening for early detection of these diseases and also automates referral management. The application, linked to the Ayushman Bharat National Health Protection Mission, has been used to screen around 82 million beneficiaries for NCDs in some 500 districts in 28 states and union territories.

The other important tech solution helping save lives is the application used by the Alliance for Saving Mothers and Newborns, an initiative that aims to reduce maternal, neonatal and infant mortality rates in the country.

Similarly, real-time data is at the heart of the SEHAT (systematic enabler for health action and transformation) mobile app, a collaboration with the Madhya Pradesh government. The app provides real-time information about the gaps at PHCs with respect to human resources, logistics, training and practices.

Such real-time monitoring of data has helped the state address local needs, and it has had a cascading effect. Says Mr Srinivas: “Mapping data can help put together a comprehensive picture of how resources can be allotted: which hospitals in a district can receive pregnant women for deliveries, which ones can be utilised for immunisation, etc.”

**More in the offing**

Technology is expected to get further entrenched in the healthcare sector in the post-pandemic era. The National Digital Health Mission (NDHM), launched in August 2020, will give a further boost to tele-health services as also the adoption of artificial intelligence to provide personalised care, especially to patients who need monitoring.

Preventive healthcare is yet another area where technology is playing a vital role, be it with wearable technologies or using technology to promote therapies and lifestyle changes. “Today, most of the money spent by the government on insurance goes towards end-stage disease corrections,” explains Mr Srinivas. “Primary healthcare can help us diagnose ailments at an early stage, manage patients who will require chronic disease management and ensure more planned hospitalisations.”

There are challenges for sure, not least with internet connectivity and the need to upskill the first-level cadre in rural healthcare systems: nurses, doctors and technicians. Additionally, there’s the need to treat people in the PHCs itself so that only critical cases are referred to tertiary hospitals. Technology will be central to these and other efforts to enhance healthcare outcomes in India.

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By Priyanka Hasangadi
Healing hands

A first-of-its-kind nursing fellowship programme in Assam is building a cadre of professionals trained to offer high-quality cancer care

Sarah Nasir visits the Barpeta Oncology Care Centre in Assam at least three times a month to seek treatment for breast cancer. The 40-year-old gets some relief from the fact that the centre is just 30 minutes away from her home. Before it opened in December 2020, she had to undergo a gruelling four-and-a-half hour journey, each way, to reach the nearest cancer care facility (in Guwahati).

Ms Nasir is one of an estimated 2.25 million Indians who suffer from cancer. A recent World Health Organization report states, more alarmingly, that one in 10 Indians will develop cancer during their lifetime and one in 15 will die of the disease.

Emergency priority

The extent and immediacy of the cancer emergency in the country is one big reason the Tata Trusts have made cancer care a priority in their healthcare programmes. Ms Nasir has benefitted from this commitment. She and many other patients from her state depend on a network of cancer centres set up by the Assam Cancer Care Foundation (ACCF), a partnership between the state government and the Trusts.

Apart from convenience and the quality of treatment she receives, Ms Nasir says she prefers visiting the Barpeta centre for the nursing care it offers. “I feel I am safe in the hands of the nurses here,” says Ms Nasir. “In addition to being excellent professionals, they are very caring.”

The nurses she is referring to are ‘oncology specialist nurses’ (OSNs),
Special skills for special needs

I have been a nurse for 20 years but I did not know much about oncology nursing,” says Sabita Sen, an operating theatre nurse at the Dr Bhubaneswar Borooah Cancer Institute in Guwahati. “Enrolling for the nursing fellowship programme was an eye-opener.”

The 44-year-old Ms Sen joined the programme in January 2021 in order to upgrade her nursing skills. “I was always interested in bone marrow transplants and saw this training as an opportunity to learn the key differences in caring for cancer patients,” she says. “What stood out was the theoretical knowledge: it helped me understand the rationale behind surgeries and has made my work in the operating theatre more interesting and meaningful.”

The enthusiasm is shared by 26-year-old Smita Chetri, who works at the State Cancer Institute in Guwahati. “When I was studying to be a nurse, our syllabus had limited information about oncology nursing,” she explains. “After I joined this programme, I got to explore each and every aspect of the field. Having hands-on practical experience in an oncological set up has made learning fun and realistic.”

The training hasn’t always been smooth sailing, with participants having to juggle on-going duties and learning along with assignments and assessments. Ms Chetri is clear the effort has been worth it. “The needs of cancer patients and the care required are very different from that of other patients,” she says.

Ms Sen is upbeat about the contribution she can make locally. “I have been able to enhance my knowledge through the programme, but what makes me happier is that I will be able provide quality services to the people in my area,” she says.

professionals who have undergone intensive training as part of a nursing fellowship programme launched by the Tata Trusts and ACCF. This first-of-its-kind programme equips nurses with specialised knowledge and skills in cancer care and treatment.

The nurses at Barpeta and other ACCF facilities have an enormously difficult, and delicate, responsibility on their hands. “From the clinical perspective, cancer is an extremely challenging ailment to deal with,” says Dr Sanjiv Chopra, chief executive of the Trusts’ cancer care initiative. “It calls for a novel and empathetic approach towards patients.”

OSNs will help ACCF bridge a key human resource gap in the 10 cancer hospitals it is establishing in Assam. “Along every step of the cancer continuum, oncology nurses are integral to the delivery of quality, patient-centric care,” adds Dr Chopra. “We felt it was necessary to train local nursing talent so that they can become champions in the cancer care delivery team.”

The nursing fellowship was launched in July 2020 with 12 registered nurses. The 11-month-long programme includes cancer nursing, treatment modalities, palliative care nursing, communication and counselling, and leadership lessons. Kickstarted in Assam, the programme — through which 18 OSNs have been trained in two batches thus far — will eventually be rolled out in other states.

The teaching is done mainly by in-house master trainers and facilitators from the ACCF team. Lending a hand are the Foundation’s medical oncologists, radiation oncologists and palliative doctors — the backbone of the programme — as also doctors from Guwahati and Mumbai and nursing research experts.

At the end of the course, the freshly minted OSNs get placed as mentors or in relatively more responsible roles at an
ACCF centre. While the plan was to incorporate both online and offline elements in the fellowship programme, the Covid pandemic and the subsequent lockdowns led to a digital-only module for some time. This posed challenges for those unfamiliar with online platforms but adaption was quick as the modules were made user friendly and faculty was available at all times to guide the nurses.

Despite the Covid pandemic roadblocks, the programme was rolled out successfully and the quality of the training provided has produced a batch of excellent nursing professionals.

**High-quality care**

“The quality of service provided by the nurses here is very good,” says Gajendra Sharma*, a 39-year-old testicular cancer patient who lives in Dhemaji and gets chemotherapy at an ACCF centre. The nurses also counselled Mr Sharma and his family members about the treatment modalities and the ways in which he could improve his psychological well-being.

“Nurses are the most vital link in the clinical care delivery system,” says Dr Sajal Sen, ACCF’s chief operating officer.

“Cancer patients need specialised care and attention due to a variety of reasons. There is also the specific psychosocial needs of patients as well as their immediate caregivers. Our objective is to create a large pool of cancer care nurses in the healthcare system for the larger benefit of patients.”

*Names changed

By Priyanka Hosangadi
For residents of Dzüleke village in Nagaland, Covid could not have come at a more inopportune time. Home to a fledgling ecotourism initiative that had become a near-perfect model for sustainable development and rural transformation, things were looking up for Dzüleke. Then the pandemic hit. Tourist arrivals dropped to zilch in a hurry and revenues dried up.

“Covid has affected our lives badly,” says 40-year-old Kevisono Meyase. “It has prevented the tourists from coming to our village and it has affected our incomes. This was not how it used to be.”

Ms Meyase and other residents of Dzüleke are part of a Tata Trusts-supported initiative that has planted the village on the tourist map of Nagaland and India. Located about 40 km from the state capital Kohima, the village had made the most of its picturesque setting to pull in tourists and travellers.

The popularity is well deserved. Dzüleke...
boasts a plethora of delights to entice and enthral visitors, from adventure options and nature trails to immersive living experiences. The pristine beauty of the place is its biggest draw and this has attracted people from Delhi and Mumbai, even from far-off Germany, France and Australia.

Dzüleke, which gets its name from the river that goes underground once it reaches the village, is home to about 30 households belonging to the Angamis, a Naga ethnic group. Agriculture, the mainstay of the population, enabled the residents to survive but this was never going to be enough.

Tourism began here, about 10 years ago, following a period when the local village council banned the hunting and trapping of wild animals in the nearby forests. As a result, the region became home to a rich variety of wildlife and this began drawing the attention of bird and animal lovers, botanists and trekkers, researchers and scientists.

With a view to capitalise on Dzüleke’s
NEIDA’s objectives were two-fold: ensuring that the local community benefits from tourism, and preserving the natural and cultural heritage of the region. The villagers, with no prior experience of managing an ecotourism project, had to be formally trained to handle the demands of the unfamiliar business.

The ecotourism venture began with training programmes for the local people. A group of youngsters and village elders were sent to Yuksam in Sikkim to learn from a similar community-based ecotourism project, and another set off for the Kaziranga Wildlife Sanctuary in Assam to be trained as guides.

The villagers were educated on how to establish homestays and the training included hospitality management, housekeeping, English classes, cooking, and workshops on sanitation and accounting.

Equity and equality are hardwired into the ecotourism model to enable the rural populace to participate gainfully from tourism activities.”

Nagaland offers huge potential for tourism due to its natural and scenic beauty, and a sense of mystery about the local culture,” explains Sentimonga Kechuchar, state coordinator with NEIDA. “We decided to help develop a community-based ecotourism model to enable the rural populace to participate gainfully from tourism activities.”

Members of the Dzüleke Eco-Tourism Board at the Tourist Information Centre

Dzüleke’s artisans are a big part of the immersive experience that the ecotourism initiative offers visitors
Asa Meyase, a bamboo craftsman, has found new customers for his products through the ecotourism venture the project and it ensures the initiative’s long-term sustainability. Each participating family benefits equally from Dzüleke’s growth.

Working with the community, NEIDA set up the Dzüleke Development Fund, and managed by the Dzuleke Eco-Tourism Board, to provide financial stimulus for the project. A tenth of all income from tourism-related activities goes into the fund, thus creating a sustainable model for community development.

Dzüleke welcomed more than 11,000 visitors from near and far in the 2015-19 period. The benefits were quick to accrue. “Previously, I had to depend solely on agriculture but that changed after I became a part of the ecotourism initiative,” says Ms Meyase.

The non-tangible benefits that the initiative offers have also been a big draw for Dzüleke residents. “More than the income it provided us, I liked interacting with the tourists. I’ve learnt so much about different cultures and places and my communication skills have also improved,” says 24-year-old Keoviko Khate.

All of that was before the pandemic brought the world to its knees. Dzüleke could not escape the Covid shadow as
tourism ground to an abrupt halt. But the folks here are not a lot that can be kept down for long.

Egged on by NEIDA, Dzüleke’s villagers have used the lockdown period to improve and expand their tourism infrastructure. “Our experience over the last six-odd years has taught us of the need to improve, diversify and increase hosting facilities in the village,” says Ms Kechuchar.

The community has renovated two tourist huts, constructed a treehouse and two outdoor sheds, and also developed a new picnic site. “I have constructed another room to accommodate more guests,” says 58-year-old Sotuno Angami. “I’m confident that once restrictions are lifted tourists will flock to our village as they did in the past.”

By Jairam Pai
Creating a crafts-based business model for budding village entrepreneurs in six handloom clusters — that’s the objective of Antaran, a Tata Trusts programme that is helping weavers in four states profit from exquisite skills born of tradition and culture. Launched in 2018, Antaran has a target of reaching 3,000 weavers involved in pre-loom, on-loom and post-loom work, and, through them, enable the setting up of more than 300 microenterprises that can sell directly to customers. The clusters are in Odisha (Gopalpur and Maniabandha), Assam (Kamrup and Nalbari), Nagaland (Dimapur) and Andhra Pradesh (Venkatgiri), each of them home to a rich weaving heritage.

Featured here are four success stories from a unique initiative that is connecting some of India’s most talented weavers to a wider market.
Vekuvolu Dozo — “my friends call me Viko” — began learning to weave at the age of 18, right after she got married, with her aunt as tutor. “I made my first shawl on a loin loom as a gift for my husband, and that’s a ritual in our culture,” says the 38-year-old Vekuvolu. “It has been quite an eventful journey since.”

Originally from Thuvopisu in Phek district and currently residing in Dimapur, Vekuvolu has turned what is now a passion into a small business with the help of a team (below left) that includes homemakers and widows. She uses a loin loom, long used to weave cloth in Nagaland, to craft a continuous warp. She and her sisterhood fashion Naga motifs symbolic of their life and surroundings, that speak of warrior tales and inner strength.

“Our products reflect and represent who we are as a people; they embody our culture,” says Vekuvolu, a mother of five. “I have a vision and I want to continue being an ambassador and proponent of this craft.”
Sudhanshu Mohan Das, Odisha

Sudhanshu Mohan Das belongs to a family of weavers from Nuapatna in the Maniabandha region. He was forced to leave the craft simply because he could not secure much income from it. That’s the story of countless weavers in India, but Sudhanshu was luckier. The Antaran initiative was the spark for him to return to weaving after 12 years. He started again, this time from scratch and with a single loom.

Sudhanshu’s expertise lies in weaving the renowned ‘Maniabandha weft ikat sarees’ in silk. After coming through the ‘Antaran education programme’ in 2019, he began harnessing the power of digital media to discover customers from near and far. A little hesitant at first, Sudhanshu was helped by the Antaran curriculum, which focuses on the basics of social media marketing while distilling the advantages of daily postings, hashtags, tagging, video call sessions and the like.

Proof that Sudhanshu has got it right came from a Pune customer. “She purchased not one but two beautiful sarees from me and was so happy with them that she sent a handwritten note complimenting my work along with a box of chocolates for my little son,” he says.
“Working on handlooms is like any other household activity,” says Dipika Kakati, a weaver from Kamrup. “Earlier we were either making cloth for family or, commercially, for the local traders or middlemen who gave us bulk-yardage orders. It was after Antaran’s intervention that I started looking at it from the perspective of a small business.”

A mother of two and with a husband who works as a labourer, Dipika needed to find an extra income source. And that is what she has done with her skills in weaving Eri silk and cotton fabrics, sarees and dupattas. “I try and create new designs,” she says. “I draw inspiration from nature and my surroundings, anything from a small leaf to a flower. I simplify these and use them as design elements.”

Dipika puts six hours of every day into weaving while juggling chores and orders that have started pouring in. Her business provides employment to seven associate artisans, part of a community of more than 110,000 weavers spread across the region. Says Dipika: “I’m building a small business today; my children will take it to greater heights.”
Itishree Sur, Odisha

Born into a family of weavers from Fakirpur village in Gopalpur district, Itishree Sur is an artisan-entrepreneur who specialises in weaving hand-spun tussar sarees and dupattas (scarves). These gorgeous products generally come in an earthy palette and have distinctive Kumbha-temple borders.

Financial constraints forced Itishree to leave school and her weaving habit lapsed. She took it up again in 2002 after she was married into a family of tussar weavers. Soon Itishree and her husband started a small business, making her the only woman entrepreneur from her cluster.

When Covid struck and the lockdown hit India’s handloom sector hard, Itishree and others like her managed to pull through thanks to sales generated through the ‘Antaran artisan connect’ website and other online media. Itishree and her family used the opportunity to connect with customers.

One of them was Sai Vaishnavi from Pune. She says: “Buying from malls or huge shops may be easier but purchases of this kind never fail to leave a wide smile on your face. It is a whole new experience to know who makes your clothes and every bit of what goes into the making of a finished garment.”

Compiled by Kainaz Mistry
Photographs: The Antaran team
Heeding the rural call

Transforming the lives of people and fostering community development are not possible without fundamental changes in the socioeconomic framework of society, believes Suresh Suratwala. He is well qualified to comment, having spent his career being involved with rural social uplift programmes supported by the Tata Trusts, principally the Devapur project.

The nonagenarian Mr Suratwala's interest in rural development dates back to the early years of post-independence India. This led him, in 1955, to the Devapur project, initiated by the Sir Dorabji Tata Trust (SDTT) to bring about holistic social development of nine villages in Man, a backward region in Maharashtra's Satara district.

This pioneering experiment comprised a spectrum of economic and social welfare programmes spread across different spheres: farming, watershed development and lift irrigation, rural electrification, livelihood generation and more. Mr Suratwala, an alumnus of the Tata Institute of Social Sciences, led the Devapur project with distinction and his work has gone on to inform the Tata Trusts' approach to community interventions.

Mr Suratwala has distilled the rich experience gained from the project into a book, Paradox of Rural Development in India: The Devapur Experience. In this conversation with Samod Sarngan, he shares thoughts and insights about his work and the book. Edited excerpts from the interview:

How do you explain the ‘paradox’ part in the title of your book?
In an unequal society like ours, ‘development’ only helps increase and deepen inequality and injustice, leading to further concentration of wealth and the means of production in a few hands. This is the first paradox. The second, I feel, is that poverty brings out the finer qualities of human beings;
these tend to disappear when people get better off and prosperous.

**What led you to put your experiences into a book?**
While working with the Devapur project, I experienced these paradoxes and that made me want to write this book. I was feeling a sense of frustration and disappointment; I thought I must put this into words so that somebody could come up with answers. I’m still waiting for some such response.

**You talk about the dilemmas of development. How can social development organisations navigate the challenge?**
To put it simply, for social development to be really effective, these organisations should first try to bring about distributive justice and equality in society. The complexities and difficulties in rural work have to be countered with devotion and dedication, commitment and continuous, conscious effort.

**You say that the real yardstick of rural development is not to create ‘idealised models like an oasis in the desert’ but to increase community consciousness. How can this be achieved in a country like India?**  
Community consciousness can be brought about by basic education, with a focus on skill development among children. People need to be given freedom from the past so they can live and learn in the present and create a better future. Israel has done this successfully.

**The book calls for radically transforming the education system ‘in consonance with the constitutional imperatives’. Is there a need for a Gandhian-style nai talim?**
Nai talim is often described as education through handicrafts. Mahatma Gandhi believed the highest development of the mind and the soul is possible under such a system of learning. Our education system suffers from the evil of crippling individuals. The competitive attitude is inculcated into students, who are then trained to worship acquisitive success as preparation for a future career.

**Looking back, how do you feel about your decision to work in the Man region?**
During the independence movement, Gandhiji called upon India’s educated youth to go to the country’s villages and work with the impoverished. This was the inspiring ambience of the Gandhian era, both before and after independence. I was one of those who was influenced by this compelling spirit. I feel satisfied that by working in Man I performed my duty as an Indian. I learned much more in the field than I did in college and the Tata Institute of Social Sciences.
Of dogs, friendships and finding a higher purpose

Stories that end pleasantly don’t always start in pleasant places. This one certainly doesn’t. It’s hard to forget the late night when my motorcycle screeched to a stop under one of the many orange streetlights on a road in Pune. Cars sped by threateningly. I knew what I had seen that had made me pull over. Falsely hoping it might be something else, I looked at the centre of the road in the distance. A white dog with brown spots lay in a pool of his own blood. I was right the first time.

This is where it started — the first nudge of destiny’s curious finger on the first domino.

He wasn’t run over just once. And it wasn’t even a one-off incident. It was the sixth time I had had to pull over in those couple of months with nothing left to do but stare helplessly. I used to imagine doing terrible things to the people who had run over the dogs — worse to those who had run them over after they had died. Grief would fill my insides thinking about their last moment and how lonely they must have been, apart from their obvious pain. Were they crossing the road to meet their friend? To see their puppies? To find food? But it’s not like my conscience spared me any shame. I should have had, at the very least, the decency to move the dead dog to the sidewalk. I didn’t.

At work the next day, with colourful curses, I would go on to describe how evil we are as a race, not letting anyone do their job until my passionate preaching was done. On one such preachy morning, a colleague pulled me aside hesitantly to tell me about the time he had run a dog over several years ago.

A shared empathy for street dogs and the wish to save them from being run over on roads sparked an uncommon kinship between automobile design engineer Shantanu Naidu and Ratan Tata, the Chairman of the Tata Trusts. I Came Upon a Lighthouse is Mr Naidu’s rendering of that bond and their mutual love for all things canine. It is also the story of Motopaws, the organisation Mr Naidu founded with friends. One of their solutions for keeping the strays on our roads safe: reflective collars that mark them out at night. An excerpt from the book:
‘I had no choice. It was either that or to swerve the car at the last minute and drive my family off the road,’ he said.

‘Last minute?’

‘Yes, last minute. I didn’t see him until the very last minute.’

After making sure I didn’t hold it against him and we were still friends, he left. But the ‘last minute’ part of the story stayed with me. Was this happening with all the drivers that run over dogs? Over the next few weeks, I was obsessed with finding out and set out to speak to people who had been in accidents involving dogs or close calls of some sort. All of them had a similar story to tell.

‘They appear so suddenly.’

‘The streets aren’t well lit.’

‘I didn’t even get a chance to slow down …’

If there was any way of fixing this, it wasn’t just about making the dogs visible. They had to be visible from a distance. Enough distance to give a driver time to think about what his next move should be to avoid the dog on the road.

I took all of this and sat down with Mihira, the girl I was seeing then. To call Mihira an animal lover would be a grossly unfair understatement. She was a cute little passionately dedicated animal soldier who would go to great lengths for a rescue. We discussed making the dogs visible.

‘We should put something bright on them. Shiny collars!’

I can imagine how very lame that must sound now. Mihira must have really been into me to be into this. Or equally lame.

But being her sweet, unselfish self, she obliged.

‘What would we make them from?’

‘Well, we don’t have a lot of money, so something cheap? My fashion designer friends said we could use denims.’

‘Yes! Oh, oh! We can cut denim pants! Let me go home and stitch one.’

Cut pants and make dogs shine. Sure.

As an automotive design engineer at Tata Elxsi, I was aware of the reflective tape used on cars. It’s bright, is seen from a distance and reflects any light that falls on it at a direct angle. I bought a few meters of the red tape for Mihira and she brought back a stitched collar the very next day, done well enough to get us excited. She also put slits and a button on it.

‘Let’s test this! Let’s collar a dog.’

Growing up in Pune you get to know pretty much all the nooks and crannies of the city. We went to a rather lazy one where a dog was kind enough to let us put the collar on. In fact, he didn’t care as long as he was being cuddled. With his wiggly butt and happy with the sudden attention, he didn’t even notice us putting it on. We took a ride around the block and returned with the headlight on.

Words cannot capture the glory with which the clueless dog shone that night. A beautiful, glowing phoenix! A fat and cuddly phoenix that couldn’t fly. But the collar worked!

As with any project, you are giddy with excitement about, we decided to name it first. A weird christening process later, ‘Motopaws’ was finalized. ‘Moto’ for the drivers and ‘paws’ for the dogs. Concerns were raised about it sounding very similar to ‘menopause’, but we stuck with it anyway. A local tailor was willing to cut up denims and stitch us 500 collars. I don’t know if it was because of the ridiculousness of Motopaws or because of the fact that it involved dogs, but the rest of the team just put itself together. Mihira, my best friend Sukrut and I, with the addition of another friend called Kalyani, branched out to discover hyper, young students dying to join this … well, for the time being, let’s call it ‘charade’.
A paradox revealed through portraiture

A photograph taken seven years before her passing says much about the life, times and character of the trailblazing Meherbai Tata.

The much-loved wife of Dorabji Tata and daughter-in-law of Jamsetji Tata, the founder of the Tata group, Meherbai Tata was a woman of personality. A participant in the ornamental theatrics of being imperial within Empire, one finds her name regularly among the maharajas, nawabs and begums in royal chronicles. And deservedly so.

Meherbai was honoured with the ‘Commander of the Most Excellent Order of the British Empire’ (CBE) in 1916 for her philanthropic efforts in service of the Crown during World War I. She hosted Queen Anne, along with Mahatma Gandhi and Jawaharlal Nehru, at her home. She was India’s first woman Olympic athlete — at the 1924 Paris games, although her name is missing from India’s records — and

Images courtesy: © Victoria and Albert Museum, London (above left), and, Trustees, Chhatrapati Shivaji Maharaj Vastu Sangrahalaya, Mumbai.

The Lafayette Studio photograph of Meherbai Tata from 1924 and, commissioned after her death, the painting based on it.
the first Indian woman to fly in an airplane (in 1912). As founder of the National Council for Women in India, she fought for the ‘modern’ educated Indian woman.

In the midst of a global pandemic, with grief and loss surrounding us, the time is perhaps apt to ask the hereafter questions. What becomes of us once we leave this realm? How would we like to be remembered? What happens to our legacy, our life’s work, the impact we make through our time in this world?

Photographs and portraits have long been used as a way to remember our ancestors and loved ones. Such remembering was not as straightforward in Meherbai’s day as it is now. The process of being photographed took far too long for the possibility of candid captures. One would carefully choose a photo studio, attire, props and then strike a calculated pose as the camera registered the image. Images from this period, thus, represent the stories the people posing wanted to tell about themselves, how they hoped to be seen and remembered.

As an art historian, I research how such archived portrait photographs, when interpreted through the lens of art history, can recover ‘lost identities’. In the case of Meherbai, the photographs illuminate the private, the public and the political, as also the life, times, achievements and insecurities of a once dominant woman who belonged to one of the most powerful industrial families of India. The attempt here is to uncover the secrets hidden within Meherbai’s official portrait.

On 27 June, 1924, Lady Meherbai Dorab Tata walked into The Lafayette Studio at 160 New Bond Street, London, for her official photograph, possibly on the occasion of being summoned to court at Buckingham Palace. The studio had built a reputation as portrayers of a rich and powerful empire and had been decreed the title of ‘Photographer Royal’. The warrant was a magnet for the studio’s clientele, among them India’s royals and other eminences. These dignitaries flocked to Lafayette for the explicit purpose of having an ‘official portrait’ made.

‘Court’ attire
Within the black-and-white frame of her glass negative, located in the Victoria and Albert Museum’s archives in London, Meherbai looks ethereal. In the Lafayette archives, translated from plate into printed form, within the transferred image the light changes immediately (see image on page 68). One’s gaze is drawn towards her white gloves — the whitest element of the portrait — the very piece of her outfit that makes it definitive English ‘court’ attire. A gold bangle, with intricate leaf motives, traditional to Indian dressing, sits subtly over her gloves on each hand.

Meherbai appears dressed in a crisply ironed satin-silk sari, the folds still visible around the skirt. The image reveals photography’s ability to capture the unintended. The ironing around her hip gives way to crumpling. She probably arrived at the studio wearing the outfit — no easy task — and she would have had to climb up the three flights of stairs to the top floor studio, where the cumbersome equipment of the photographic trade would have been waiting for her.

A little rosette sits upon Meherbai’s waist, and it pieces together two eclectic elements of her outfit: the Edwardian blouse with a V-neck and her sari. The pallu (loose end of the sari) gracefully drapes her combed bun before flowing in the Parsi-Gujarati style to the front. Meherbai’s attire immediately identifies her as an Indian, somebody with knowledge of western fashions. Her hands...
come to a close, right hand tucked within her left, as she holds an ostrich feather plume and Indian *batwa* (purse) within her palms. Her dual allegiance to India and the Crown is evident.

For Meherbai, the ‘national sari’ was almost obsessively a patriotic symbol. She wore it while driving a motorcar or riding a horse, even at tennis tournaments. Furthermore, she was noted to have — in the words of Stanley Reed, then editor of *The Times of India* “regarded with some impatience the younger members of her community who discarded the traditional costume for Western modes”. In an address delivered at Battle Creek College on 29 November 1927, she stated proudly while drawing attention to her attire: ‘This is the sari, the dress that I wear. The sari was never worn in Persia, but we have modified it a good deal and we wear it a little differently from the Hindu ladies from whom we took the dress’.

By the early 1920s, the sari had emerged in India as a political garment, helped along by Gandhi’s push for women — as “mothers of Indian industry” — to give up foreign consumption and switch to Khadi fabrics. Meherbai’s choice of modified court dress, an amalgamation of the Indian-Gujarati sari draped over an Edwardian-fashioned bodice with a plunging neckline, is intriguing within this political context. It occupies a threshold position, much like her in society, between the English and the Indian.

Meherbai accessorises her outfit with her ‘Jubilee diamond’ pendant necklace, named after Queen Victoria’s centenary anniversary. This is set in a platinum claw and hung on a thin platinum chain, surrounded by a double-chain pearl necklace that extends to her torso. At 245 carats, after being cut and polished, the diamond is twice as large as the Koh-I-Noor, that vexed icon of colonial plunder.

Found in a South African mine in 1895, the Jubilee diamond was acquired by a consortium of London diamond merchants. During the cutting and cleaning process, the consortium realised the brilliance of the diamond and planned for it to be presented to Queen Victoria as a gift on the occasion of her ‘jubilee anniversary’ in 1896. This did not happen for some reason.

The consortium decided to display the diamond at the 1900 Exposition Universelle in Paris. It is here, in the centre of much hype and attention, that Meherbai and Dorab Tata ‘shopped’ for it. ‘Shopping’ at the Paris expositions was almost a tradition within the Tata family. In 1878, Jamsetji Tata brought from his trip much that fascinated him, including
animals that he kept at his zoo in Navsari and the spun-iron pillars that till today hold up the ballroom of the Taj Mahal Hotel in Mumbai.

The Jubilee, which holds the rank of the sixth-largest diamond in the world, was purchased by Meherbai and Dorab for £100,000. Every time the Tatas removed it from their safe deposit vault in London for Meherbai to wear it, they were reportedly ‘fined’ £200 by the insurance company. Posing confidently with the Jubilee, a gift for the queen within this portrait, one cannot help but wonder how the diamond might have been received as part of her garb in court at Buckingham Palace.

**Diamond for a cause**

The Jubilee was part of the jewellery pledged by Dorab Tata to the Imperial Bank when the Tata Iron and Steel Company (TISCO) was undergoing a crisis in 1924. The diamond was eventually sold following Meherbai’s demise from leukaemia, along with the rest of her jewellery, to set up the Lady Meherbai Tata Trust for cancer research and women’s education.

Coming back to the portrait, upon Meherbai’s lapel, almost camouflaged by the gradient of her sari, is her CBE badge. The award was instituted by George V to reward military and civilian wartime service to the Empire. It was almost a bribe to draw elite members of the colonies to help the imperial war effort. As Parsis with no title of their own, the CBE and other similar honours may have been the only way for them to gain the social clout to match their growing business power.

Unlike many of her female counterparts, Meherbai is careful not to lean on or take the support of any props in her portrait, an authoritative pose that marks her unconventional individuality. Meherbai stages herself as youthful, stands tall and poised, showcasing the grace, dignity and athletic spirit she was bred to embody. She is proud of her figure — Lafayette’s ‘retouchers’ were experts at bringing in waists and correcting arm widths, but Meherbai seems to have excused herself from such services — she is self-aware and confident.

The portrait’s backdrop is painted in a style typical of the period’s fashions, blurred out like the background of a Rembrandt painting. Lafayette’s expert team ensured that Meherbai, even embellished with all her adornments, is the only distinguishable subject. One sees a hint of a frame with a western balcony sneaking through. The only studio prop seen is a stool in the middle ground that partially hides behind Meherbai, its purpose seemingly to ground her within the composition.

The lighting is dramatic and Meherbai’s expression austere. She is well aware of her beauty, a notion that during this period alluded in part to a fair complexion. As Persians, Parsis were not as ‘white’ as Europeans, and not as dark as Indians. They held an in-between position even in this aspect. Meherbai doesn’t have to hide behind her colour. Her complexion is in fashion.

The Tatas were certainly proud of Meherbai’s portrait. It is the one the family chose to convert into an oil painting, upon her death, to immortalise her memory (see image on page 68). Queen Victoria’s court painter, John Lavery, was employed for the commission. Curiously, Meherbai’s _batwa_ is missing from the painting’s composition.

Within the portrait, colour is brought to Meherbai’s skin and garb. She materialises as a manifestation of Reed’s description of her: “Above medium height, clear cut, and clear-eyed, with that flush through the faintly tinted olive skin...”
Lady in the limelight

Frozen frames depict Meherbai Tata over the course of an extraordinary life lived in momentous times.
Jamsetji Tata (standing centre) with (from left) wife Hirabai, younger son Ratan, Dorabji’s wife Meherbai, Ratan’s wife Navajbai and Dorabji; Meherbai and Dorabji; Meherbai and Dorabji Tata after their wedding on February 14, 1898; the couple with a group of British visitors in Jamshedpur
Dorabji and Meherbai Tata with RD Tata (Jamsetji Tata’s cousin and the father of JRD Tata) and his French wife, Suzanne Brière, who came to be known as Sooni Tata; Meherbai soon after her marriage; Meherbai with elder brother Jehangir in a childhood photograph; Meherbai with Sooni Tata.
Meherbai started playing tennis when very young; Meherbai with her tennis trophies; collecting her prize (from Dorabji) after winning a competition; riding a horse in Matheran, the hill station near Mumbai.
Dorabji Tata and Meherbai Tata (above) flank Esme Howard, the British ambassador to the United States, at the White House in 1927; Meherbai (front row, fourth from left) at the International Council of Women summit held in 1929.
(Clockwise from top left) Dorabji and Meherbai with Jamsetji Tata; Meherbai with Dorabji a short while before her demise; the couple pose for a photograph

Images courtesy: Tata Central Archives
More than 200 young talents from 60 institutions spread across India participated in the ‘Students’ Biennale’ event, themed ‘Making as Thinking’, at the last full edition of the Kochi-Muziris Biennale, the celebrated exhibition of contemporary art. Held in Kochi in Kerala, the

SETTING COURSE FOR THE CREATIVE
Siddharth Shil from Kala Bhavana, Visva-Bharati University, Shantiniketan, repurposed four abandoned bathroom stalls using locally sourced junk and graffiti-style text to communicate his personal take as an outsider in Kochi.

Biennale is among the biggest art exhibitions in Asia and is organised by the Kochi Biennale Foundation (KBF). The Tata Trusts supported KBF in its effort to create a platform for young artists and curators to improve their skills and exhibit on the international stage. The Tata Trusts Students’ Biennale national and international awards provides these young artists with the opportunity to participate in month-long residencies and showcase their work in international art exhibitions. Captured here are images of the artworks crafted by the participants.
Bhikari Prasad, also from Kala Bhavana in Shantiniketan, used discarded wood sourced from his University’s stores to create a sprawling network of houses to represent the phenomenon of ‘connectedness’ and ‘co-dependency’.

Abhijith, a student from Raja Ravi Verma College of Fine Arts, Mavelikara, Kerala, creates informal portraits with terracotta of people from his past, fashioning them as per his memory of their voice, behaviour and interactions, and not their appearance.
‘We are also human beings’ — an installation comprising used plastic sacks, knives, photographs, plaster of Paris, soil and glass — was created by the students of Raja Ravi Varma College of Fine Arts, Mavelikara, Kerala.

Aryavasu, an artist from Kurukshetra University, Haryana, combines two distinct elements — construction rods and eyeballs — in this work. The rods are symbolic of the growing urban landscape while the eyeballs represent all-pervasive surveillance.
‘Sanalleipak: A Glimpse’ — a multimedia installation made of ‘found’ objects, paintings on canvas and acrylic sheets, textiles, fishing nets, video projections, TV monitors and LED lights — was crafted by the students of Imphal Art College, Imphal, Manipur.

The installation by Rajesh Chacko, a student of Chamarajendra Government College of Visual Arts, Mysore, reflects abandonment. By wrapping discarded cloth around broken tree limbs, he created a vibrant walk-in environment for visitors to experience.
India has made remarkable progress on many fronts since its independence. The country has big global ambitions and expects to become a $5-trillion economy in the near future. The first cannot be achieved and second will not materialise if malnutrition is not tackled on a war footing.

Malnutrition, especially among women and children, remains one of India’s most intractable public health challenges. We have the largest number of stunted, wasted and underweight children in the world. Our impressive economic progress has not touched countless citizens at the bottom of the pyramid, in particular the nearly 35 million children under the age of five who are stunted because they are not getting enough, or the right kind, of nutrition.

India is a conundrum when it comes to economic growth coinciding with high poverty rates. The eight poorest states of India, accounting for more than a third of the population, have poverty rates comparable with 26 of the poorest countries in Africa. Despite being self-sufficient in agricultural output and becoming the largest producer of milk globally, our rates of malnutrition and stunting are shocking. This is a silent emergency.

Malnutrition is a global challenge with huge social and economic costs. It can take many forms and is often split into two broad groups of conditions: one, undernutrition, including stunting (low height for age), being underweight (low weight for age), wasting (low weight for height) and micronutrient deficiencies (deficiencies of vitamins and minerals); and two, excess weight, obesity and diet-related noncommunicable diseases.

Malnutrition affects people in every part of the world. It is estimated that, globally, some 2 billion people have micronutrient deficiencies. About 144 million children under the age of five are stunted, 47 million are wasted and 38 million are overweight or obese. Adding to the burden are the 528 million — or...
29% of women of reproductive age around the world — affected by anaemia.

While the aggregate levels of malnutrition in India are outrageously high, they hide more than they reveal. There are significant inequalities across states and socioeconomic groups (rural areas, the poorest, girls, and scheduled tribes and castes are the worst affected). In the midst of the gloomy statistics, it is encouraging that nearly all Indian states have recorded declines in malnutrition, proving that progress is possible across the board.

**Why invest in nutrition?**

It is a moral imperative. The enhancement of health and nutrition is a constitutive part of development. Adequate nutrition is, simply put, one of the foundational building blocks of life. Every child has a right to optimum nutrition so that he or she can develop to his or her true potential. Well-nourished children are better equipped to fend off diseases. They do better in school. And they grow up to become more productive members of society.

Undernutrition is the single most important cause of child deaths. Approximately 54% of all child deaths in India is attributable to underlying undernutrition. Investing in nutrition, in the context, means investing in the future of the country. The impact extends.
beyond considerations of health. Labour productivity, the capacity of those affected to learn and to function, and the ability of whole societies to satisfy their economic needs can all be adversely affected by malnutrition.

**What can help?**
India was an early starter in tackling malnutrition. The Integrated Child Development Services (ICDS) is one of the world’s largest community programmes. Launched in 1975, it has through the years reached near universal coverage, with about 1.34 million anganwadis (childcare centres) functional across the country.

ICDS and the National Health Mission (NHM) have unmatched reach and are intended to help the most vulnerable. Together, they are structured to deliver the health and nutrition inputs that children need. The country also has various other programmes that focus on the various underlying causes of malnutrition. However, many of these are not delivering. Poor targeting and haphazard implementation are the major problems. Lack of community ownership and participation is another impediment. The Covid pandemic has added to our woes, with a significant surge in the number of malnourished women and children.

India needs to accelerate, and quickly. At the current crawl, the country will not meet either the United Nations’ Sustainable Development Goals or the World Health Assembly targets. Aware of the urgency, the government had launched the National Nutrition Mission, or Poshan Abhiyaan, in 2018. It is a well-conceived, multi-sectoral project designed to address malnutrition in all its forms. Mass mobilisation is an important component of the mission.

**Convergence needed**
India has the necessary infrastructure — ICDS, NHM and a number of safety net initiatives — and together they address the immediate and hidden causes of malnutrition. The reality, though, is that universal programmes with low coverage exclude a large number of beneficiaries, people who need a nutrition boost the most. What is needed is a convergence of nutrition-specific and nutrition-sensitive interventions, capable of being delivered to vulnerable populations in underserved geographies.

Business as usual will not result in reaching those in urgent need of these interventions. Focusing on improving the diet of women and children, ensuring maternal, infant and child nutrition,
empowering women, improving the health system to make it more responsible and effective, strengthening the public distribution system, and creating access to clean water and sanitation will go a long way in reducing the burden of malnutrition.

We have to engineer a shift so that the malnutrition problem and its solution can be reappraised in terms of consumer perceptions and attitudes. The creation of demand is necessary. If people do not want and do not demand, then even limited supplies and services can prove superfluous. The wrinkle here is that our nutrition programmes are ‘hardware heavy’, concentrating as they do on the supply factor, with the assumption that demand is thereby automatically appeased. Community mobilisation to increase demand and ownership is critical in the circumstances.

**Government and more**

The government has to be in the driver’s seat, of course, but collaborations and partnerships with all relevant sectors and players, and civil society as a whole, are of the essence to deal with the malnutrition crisis. The government should promote multisector partnerships, and there are several existing examples of successful solutions that show the way.

Beyond the convergence of interventions, we have a lot more to do: improve the diet of women and children; continue to focus on staple food fortification; employ policy instruments to make agriculture more nutrition-sensitive; consolidate the gains of the Swachh Bharat Abhiyaan (clean India mission) to improve water, sanitation and hygiene; and use real-time data from anganwadis to drive action.

The key challenge is to collaborate to create and implement sustainable solutions at scale and at speed. Poshan Abhiyaan offers the right platform to do this.